

CLAIMS

1. A thermoformable, multilayer, co-extruded sheet comprising at least two separate foam polypropylene layers obtained by chemical foaming of two polypropylene resins having different flexural modulus, a "high modulus" polypropylene and a "low modulus" polypropylene.
2. The thermoformable sheet of claim 1 wherein the "low modulus" polypropylene resin has a flexural modulus lower than 1,500 MPa, preferably $\leq 1,400$ MPa, and even more preferably $\leq 1,300$ MPa.
3. The thermoformable sheet of claim 1 wherein the "high modulus" polypropylene resin has a flexural modulus $\geq 1,500$ MPa, preferably $\geq 1,650$ MPa, and even more preferably $\geq 1,800$ MPa.
4. The thermoformable sheet of claim 1 wherein at least one substantially unfoamed layer is positioned between the two foam polypropylene layers.
5. The thermoformable sheet of claim 4 wherein the substantially unfoamed layer is a gas barrier layer.
6. The thermoformable sheet of claim 5 wherein the gas barrier layer comprises a polymer selected from the group consisting of ethylene-vinyl alcohol copolymers (EVOH), vinylidene chloride copolymers (PVDC), polyamides, and blends of one or more EVOH and one or more polyamides.
7. The thermoformable, multilayer, co-extruded sheet of claim 1 comprising at least two separate foam polypropylene layers obtained by chemical foaming of two different polypropylene resins having different flexural modulus, a "high modulus" polypropylene and a "low modulus" polypropylene, sandwiching a gas barrier layer comprising a polymer selected from the group consisting of ethylene-vinyl alcohol copolymers (EVOH), vinylidene chloride copolymers (PVDC), polyamides, and blends of one or more EVOH and one or more polyamides, bonded to said foam polypropylene layers by means of tie layers of modified polyolefins.

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8. The thermoformable multilayer sheet of claim 7 further comprising a heat-sealing layer adhered on the outer surface of the "high modulus" polypropylene foamed layer, said heat-sealing layer comprising one or more polymers having a melting point $< 140^{\circ}\text{C}$, and preferably $< 130^{\circ}\text{C}$.

5 9. The thermoformable multi-layer sheet of claim 8 wherein the heat-sealing layer comprises a polymer selected from the group consisting of polyethylene homopolymers; heterogeneous or homogeneous ethylene-($\text{C}_4\text{-C}_8$)- α -olefin copolymers having a density $\leq 0.915 \text{ g/cm}^3$; blends thereof with minor amount of polyethylene homopolymers, ethylene-vinyl acetate copolymers; ethylene-acrylic or methacrylic acid copolymers including ionomers; heterogeneous or homogeneous ethylene-($\text{C}_4\text{-C}_8$)- α -olefin copolymers having a density from about 0.915 g/cm^3 to about 0.930 g/cm^3 ; blends thereof with ethylene-vinyl acetate copolymers or ethylene-alkyl (meth)acrylate copolymers; ethylene-propylene-butene ter-polymers; ethylene-alkyl acrylate-maleic anhydride ter-polymers; and the like polymers.

10 10. A thermoformable, multi-layer, co-extruded, polypropylene foam sheet having a density ranging from about 0.50 to about 0.85 g/cm^3 , preferably ranging from about 0.60 to about 0.80 g/cm^3 and a flexural modulus higher than 400 MPa .

15 11. A thermoformed article obtained from a sheet according to any of the preceding claims.